WE CLAIM

1. An isolated peptide which binds to an MHC molecule to form a complex that is recognized by a cytolytic T cell which recognizes and lyses cells presenting complexes of HLA-A2 molecules and the peptide whose amino acid sequence consists of SEQ ID NO: 17, with the proviso that said peptide is not the peptide of SEQ ID NO: 17.
2. The isolated peptide of claim 1, wherein the amino acid sequence of said peptide consists of an amino acid sequence found in a naturally occurring protein.
3. The isolated peptide of claim 1, wherein the amino acid sequence of said peptide consists of a non-naturally occurring amino acid sequence.
4. The isolated peptide of claim 1, consisting of 9 amino acids and satisfactory at least two of the following criteria: Lys at position 5, Phe at position 7, and Tyr at position 8.
5. The isolated peptide of claim 1, consisting of nine amino acids, wherein the amino acids at positions 4-8 are EKIFY.
6. The isolated peptide of claim 1, wherein said peptide is selected from the group consisting of SEQ ID NO: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,11, 12, 13, 14, 15, 16, 18, 19, 20, 22, 23, 24, 25, 60-87, 96, 101-103, and 108.
7. The isolated peptide of claim 6, selected from the group consisting of SEQ ID NO: 1, 13, 14, 15, and 25.
8. A composition comprising at least two peptides of claim 1.
9. The composition of claim 8, further comprising an adjuvant.
10. A composition comprising the isolated peptide of claim 1, and at least one additional peptide.
11. The composition of claim 10, wherein said peptide consists of the amino acid sequence of any of SEQ ID NOS: 1, 13, 14, 15 or 25.
12. The composition of claim 9, wherein said at least one additional peptide binds to an HLA molecule other than HLA-A2.
13. A tetrameric molecule comprising an avidin or streptavidin molecule, bound to four biotin molecules, each of which is bound to a complex of an HLA molecule and the peptide of claim 1.
14. An isolated nucleic acid molecule consisting of a nucleotide sequence which encodes the peptide of claim 1.

15. An isolated nucleic acid molecule consisting of a nucleotide sequence which encodes the peptide of claim 1.

16. Expression vector comprising the isolated nucleic acid molecule of claim 14, operably linked to a promoter.

17. Expression vector comprising the isolated nucleic acid molecule of claim 14, operably linked to a promoter.

18. Recombinant cell comprising the isolated nucleic acid molecule of claim 13.

19. Recombinant cell comprising the expression vector of claim 16.

20. Recombinant cell comprising the expression vector of claim 17.

21. Expression vector which encodes at least two of the peptides of claim 1.

22. A method for treating a subject suffering from a pathological condition comprising administering the isolated peptide of claim 1 to said subject, in an amount sufficient to alleviate said condition.

23. The method of claim 21, wherein said pathological condition is cancer.

24. The method of claim 22, wherein said cancer is melanoma.

25. A method for determining if a subject suffers from a pathological condition, comprising assaying a sample taken from said subject to determine if said sample contains cytolytic T cells which react with a complex of an HLA molecule and the peptide of claim 1, wherein presence of said cytolytic T cells is indication of said pathological condition.

Images Description and Claims (88 Kb)

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(54) ISOLATED, SSX-2 AND SSX-2 RELATED PEPTIDES USEFUL AS HLA BINDERS AND CTL EPITOPES, AND USES THEREOF

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Abstract

(57) The invention related to peptides which bind to HLA molecules and are reactive with T cells that also react with complexes of HLA-A2 molecules and the peptide of SEQ ID NO: 17. Various uses of the peptides are disclosed.